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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,501	12/19/2001	Donald Everett Curtiss	50103-418	8505

7590

09/09/2003

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EXAMINER

LAMB, BRENDA A

ART UNIT

PAPER NUMBER

1734

DATE MAILED: 09/09/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

Applicant(s)

Examiner

Group Art Unit

10/021,501

Curtiss et al

LAMB

1734

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on Paper H5 filed 5/21/03.
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-12 and 24 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-12 and 24 is/are rejected.
- ☒ Claim(s) 12 is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____.
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s) _____
- ☒ Notice of References Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-11 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith 3,207,127 in view of Yamashita et al and Sugimoto et al.

Smith teaches the design of an apparatus for dip coating wafer substrate with different layers to form a semiconductor. In forming the semiconductor Smith teaches applying a resist layer on the wafer substrate. Smith teaches layers on the substrate are formed by a dip coating using a plurality of coating vessels having an open top. Smith fails to teach the substrate mounting a disk-shaped substrate having oppositely facing surface to be simultaneously dipped coated by immersion in the liquid of the dip coating vessels. Smith also fails to teach a viscosity control system for monitoring and

maintaining viscosity of the treatment liquid in the vessels at a predetermined value. However, Yamashita et al teaches a viscosity control system for monitoring and maintaining the viscosity of the liquid supplied to the coating vessel at a predetermined value. Therefore, it would have been obvious to modify the Smith apparatus by providing a viscosity control system such as taught by Yamashita et al in communication with one of the coating vessel applying resist for the taught advantage of cost savings of recycling resist. Further, it would have been obvious to modify the Smith by using another dip coating means for thin substrates such as taught by Sugimoto et al for the obvious of advantage of automation of the dip coating step. Thus claim 1 and 24 are obvious over the above cited references. With respect to claims 2, 3 and 6-11, Yamashita et al teaches the viscosity control system includes a re-circulation loop for re-circulating the treatment liquid/photoresist in the coating vessel. Yamashita teaches the re-circulation loop including a reservoir 3 with agitator 4, inlet conduit and outlet conduit. Yamashita et al teaches the re-circulation loop includes pump 10 and a filter 11 for removing particulate matter connected to the inlet conduit. Yamashita et al re-circulation loop includes a viscosity-measuring device 12 for measuring the viscosity of the liquid in the reservoir and solvent dispensing system for supplying to reservoir in response to measured viscosity. Yamashita et al teaches the solvent dispensing system includes a tank 5 containing the solvent and a conduit with a valve assembly having control means between the solvent tank and reservoir wherein the valve assembly responds to measured viscosity by controlling flow of solvent in conduit thereby maintaining viscosity in the reservoir and coating vessel. Yamashita et al

teaches a means for diverting flow and interrupting flow from reservoir to the coating vessel by temporarily storing the resist and obvious to provide three-way valves to control to the multiple temporary storage tanks 7' for obvious advantage of greater control of the process.

This application contains claims 13-23 are drawn to an invention nonelected with traverse in Paper No. 4. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication should be directed to Brenda A. Lamb at telephone number (703) 308-2056. The examiner can normally be reached on Monday and Wednesday through Friday with alternate Tuesdays off.

B.A. Lamb/dh
August 12, 2003

Brenda A. Lamb
BRENDA A. LAMB
PRIMARY EXAMINER